

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Appln. No. 10/022,896

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A wide bandwidth Raman amplifier including a laser pump source ~~for producing a wideband pump radiation signal~~, and means for ~~producing from the pump source a plurality of wavelengths of pump radiation including means for adjustable~~ independent power control of each of a plurality of different radiation wavelengths of said wideband pump radiation signal.
2. (Original) An amplifier according to claim 1 including only one pump source.
3. (Currently amended) An amplifier according to claim 1 wherein the means for ~~producing the plurality of pump radiation wavelengths~~ independent power control includes one or more reflectors.
4. (Currently Amended) An amplifier according to claim 3 wherein each reflector produces optical feedback to the pump source at a respective different one of said plurality of wavelengths ~~and the characteristics of the reflectors are selected such that each reflector produces optical feedback at a different wavelength to the wavelengths produced by the other reflectors~~.

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5. (Currently amended) An amplifier according to claim 1 wherein the means ~~effor~~ for power control of each pump radiation wavelength includes one or more variable optical attenuators.

6. (Original) An amplifier according to claim 5 wherein there is a separate variable attenuator for each reflector.

7. (Original) An amplifier according to claim 1 wherein at least some pump radiation of more than one wavelength is coupled to the signal to be amplified.

8. (Original) An amplifier according to claim 5 including control means for controlling and/or adjusting the attenuation of each variable optical attenuator(s).

9. (Currently amended) An amplifier according to of claim 1 wherein the means for ~~providing independent power control~~ includes one or more optical switches providing either substantially no attenuation or substantially 100% attenuation depending on the setting of the switch.

10. (Original) An amplifier according to claim 9 including control means for selectively controlling the switches in order to change the overall characteristics of the amplifier.

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11. (Currently amended) A method of providing a wide bandwidth Raman amplifier including the step of producing from a pump laser source; a wideband pump radiation signal ~~plurality of wavelengths of pump radiation~~ by providing independently adjustable optical feedback to the laser source at ~~these~~ a plurality of different wavelengths of said wideband pump radiation signal.

12. (Currently amended) A ~~method of providing a~~ wide bandwidth Raman amplifier including means for ~~altering~~ independently adjusting the magnitudes of a plurality of different wavelength components of a wideband pump radiation signal to alter the amplifier gain profile during amplifier operation.

13. (Currently amended) A wide bandwidth Raman amplifier including only one laser pump source of pump radiation, and means for producing from the pump source a wideband pump radiation signal having a plurality of different wavelengths components of pump radiation, said means for producing including:

means including at least one reflector for adjustable independent power control of ~~each~~ plural of said different radiation wavelengths and including

~~one or more reflectors~~ wherein each reflector produces optical feedback to the pump source at a different one of said wavelengths ~~and the characteristics of the reflectors are selected such that each reflector produces optical feedback at a different wavelength to the wavelengths produced by the other reflectors.~~